

REMARKS

In the Office Action dated October 21, 2004, claims 1-22 are pending. Claims 1, 13, and 22 are independent claims from which all other claims depend therefrom. Claims 1, 13, and 22 have been amended.

The disclosure is objected to for informality reasons. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. Specifically, the Office Action states that the specification fails to disclose the claimed limitations of "the radio frequency shield is a superconductor" and "a first and second housing being integrally formed as a single housing". Paragraph [0023] is herein amended to provide antecedent basis for "the radio frequency shield is a superconductor". With respect to the claimed limitation of "a first and second housing being integrally formed as a single housing", Applicant, respectfully, refers the Examiner to the third sentence of paragraph [0022] of the specification in which proper antecedent basis is provided.

Figures 1 and 2 of the drawings are objected to because it is stated that they lack a legend designating Figures 1 and 2 as prior art. Applicant, respectfully, traverses with respect to Figure 1 and herewith submits a corrected set of drawings containing an amended Figure 2. The Applicant submits that Figure 1 illustrates the novel integrated electronic system housing of the present invention and the coupling thereof to a second housing containing a magnet structure. The integrated electronic system housing and the coupling thereof to the second housing are not old. Figure 2 is amended to provide a block representing the integrated electronic system housing. The integrated electronic system housing is now shown in amended Figure 2 as containing the gradient coil controller and the sequence controller, as stated in paragraphs [0023] and [0024] of the present application. Of course, the integrated electronic system housing may contain other system support electronics, also as stated in paragraphs [0023] and [0024] of the present application.

Claims 2-4, 15, and 16 stand objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. The Office Action states that claims 2-4 are not further limiting because they state that the shield is coupled to the housing encasing the support electronics, which is already stated in independent claim 1. The Applicant traverses. The Applicant submits that claims 2-4 do not simply recite that the shield is coupled to the housing, but further provide additional narrowing limitations.

With respect to claim 2, the Applicant submits that claim states that the radio frequency (RF) shield is coupled to the housing. Whereas, claim 2 states that the RF shield is coupled within the housing. Although the difference between claim 2 and claim 1 is somewhat subtle, the coupling of the RF shield within the housing is clearly more narrowly defined than the simple coupling of the RF shield to the housing. For example, an RF shield may be coupled to the exterior of the housing or to the interior of the housing.

With respect to claim 3, claim 1 states that the RF shield is coupled to the housing, which contains the imaging system support electronics. Claim 3, however, states that the imaging system support electronics is encased in the RF shield. Applicant submits that the coupling of the RF shield to the housing is also clearly different than the encasing of the support electronics in the RF shield. The recitation of claim 1 covers both the situation of when the RF shield is, for example, simply positioned between the supporting electronics and the RF coil assembly and the situation, covered by claim 3, when the supporting electronics are fully contained within the RF shield.

Claim 4 recites the limitations combination of claims 2 and 3, which have been shown to further limit claim 1.

The Office Action also states that claims 15 and 16 are not further limiting because they state the shield is coupled to the housing encasing the support electronics, which is already stated in independent claim 13. The Applicant again

traverses and submits that claims 15 and 16 provide additional limitations over claim 13, in a similar fashion as that of claims 3 and 4 with respect to claim 1.

Claim 13 states that the RF shield is coupled to the housing, which contains the support electronics. Claim 15 states that the support electronics are encased in the RF shield. Claim 15 is similar to claim 3. As stated above, the encasing of the support electronics in the RF shield is different than the coupling of an RF shield to a housing that contains support electronics.

Claim 16 states that the RF shield is coupled within the housing and encases the support electronics. Claim 16 is similar to claim 4. Again the coupling of an RF shield within a housing and the encasing of support electronics with an RF shield is different than simply coupling an RF shield to a housing. As another example, the RF shield may cover only portion of the housing. Also, the RF shield may be coupled to the interior or the exterior of the housing or may be an integral part of the housing.

Claims 1-6, 8-17, and 19-22 stand rejected under 35 U.S.C. 102(b) as being anticipated by Srinivasan et al. (USPN 5,543,711 A). Applicant submits that independent claims 1, 13, and 22 as amended are in a condition for allowance in view of Srinivasan, since Srinivasan fails to teach or suggest a housing containing imaging system support electronics that is attached to and external from a magnet structure as recited in claims 1, 13, and 22.

Claims 1, 13, and 22 have similar limitations and are therefore described together. Claims 1, 13, and 22 recite an integrated electronic system housing and magnet structure for an imaging system and imaging systems. Claim 1 includes the limitations of a magnet structure, a housing, and a RF shield. The magnet structure includes a superconducting magnet and an RF coil assembly. The housing is attached to and external from the magnet structure. The housing contains imaging system support electronics. The RF shield is coupled to the housing and prevents RF interference between the support electronics and the RF coil assembly. Claims 13 recites the limitations of claim 1 except the RF shield

U.S.S.N. 10/605,475

10

137276MG (GEMS 0220 PA)

prevents RF interference between the magnetic field, generated by the magnet structure, and the support electronics. Claim 22 recites the limitations of claim 1 except that the magnet structure includes an RF receiver coil and the RF shield prevents RF interference between the imaging system support electronics and the RF receiver coil. The magnet structure of claims 13 and 22 also include a gradient coil assembly, as well as other limitations.

Srinivasan discloses an MRI system. The MRI system includes a primary magnet coil 10, a gradient coil assembly 30, and a RF coil assembly 40, which are located within a magnet structure. The magnet structure is not attached to and is separate from a computer control and reconstruction module 58. The reconstruction module 58 includes electronics devices 60, 68, 70, 72, and 74.

Applicant submits that Srinivasan fails to teach or suggest a housing that is attached to and external from a magnet structure, the magnet structure containing a superconducting magnet and an RF coil assembly and the housing containing imaging system support electronics. In addition, Srinivasan fails to teach or suggest the stated housing coupled to an RF shield. Additionally, Srinivasan fails to teach or suggest an RF shield preventing RF interference between the claimed support electronics and the RF coil assembly, as well as between the claimed support electronics and a magnetic field or an RF receiver coil.

The housings referred to in the Office Action, namely the helium vessel 16, the coil shields 18, and the vacuum dewar 20 do not contain a gradient coil assembly and an RF coil assembly, as does the claimed magnet structure. Furthermore, the support electronics referred to in the Office Action, namely the RF coil 36, the RF coil 40, the birdcage coil 42, and the overlapping coil 44, are not contained within a housing that is attached to and external from a magnet structure, as claimed.

In order for a reference to anticipate a claim the reference must teach or suggest each and every element of that claim, see MPEP 2131 and *Verdegrad Bros.*

U.S.S.N. 10/605,475

11

137276MG (GEMS 0220 PA)

V. Union Oil Co. of California, 814 F.2d 628. Thus, since each and every element of claims 1, 13, and 22 are not taught or suggested by Srinivasan, Applicant submits that claims 1, 13, and 22 are novel, nonobvious, and are in a condition for allowance. Also, since claims 2-6, 8-12, 14-17, and 19-21 depend from claims 1 and 13, respectively, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons.

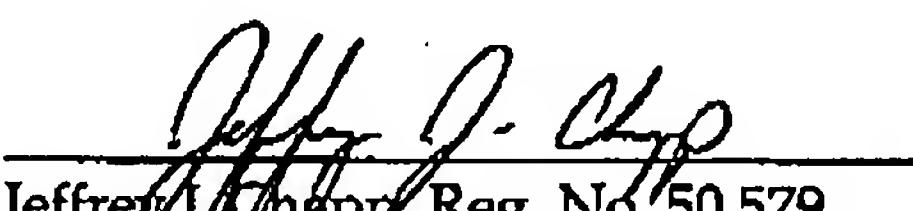
Claims 7 and 18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivasan in view of Ladebeck (USPN 5,994,903 A).

The Applicant submits that since claims 7 and 18 depend from claims 1 and 13, respectively, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons as put forth above.

In light of the amendments and remarks, Applicant submits that all of the objections and rejections are now overcome. The Applicant has added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,

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